Algebra 3 Assignment # 5

(1) Find each of the following numbers.

(a) $\sin(15^\circ)$

(b) $\cos(15^\circ)$

(c) $\sin(105^\circ)$

(d) $\cos(75^\circ)$

(e) $\sin(195^\circ)$

(f) $\cos(165^\circ)$

(g) $\sin\left(\frac{11\pi}{12}\right)$

(h) $\cos\left(\frac{7\pi}{12}\right)$

(2) Simplify each of the following.

(a) $\sin(90^\circ + x)$

(b) $\cos(90^\circ - x)$

(c) $\sin(180^\circ - x)$

(d) $\cos(180^\circ + x)$

(e) $\sin\left(\frac{3\pi}{2} + x\right)$

(f) $\cos(\pi - x)$

(3) $\text{Sin}(A) = \frac{4}{5}$, A is in Quadrant l, $\text{Cos}(B) = \frac{5}{13}$, B is in Quadrant IV. Find each of the following numbers.

(a) $\sin(A + B)$

(b) $\cos(A + B)$

(c) $\sin(A - B)$

(d) $\cos(A - B)$

(e) $\tan(A + B)$

(f) $\csc(A - B)$

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Answers

(1) **(a)** $\frac{\sqrt{6} - \sqrt{2}}{4}$ **(b)** $\frac{\sqrt{6} + \sqrt{2}}{4}$

(c) $\frac{\sqrt{6} + \sqrt{2}}{4}$ **(d)** $\frac{\sqrt{6} - \sqrt{2}}{4}$

(e) $\frac{\sqrt{2} - \sqrt{6}}{4}$ **(f)** $\frac{-\sqrt{6} - \sqrt{2}}{4}$

(g) $\frac{\sqrt{6} - \sqrt{2}}{4}$ **(h)** $\frac{\sqrt{2} - \sqrt{6}}{4}$

(2) **(a)** $\cos(x)$ **(b)** $\sin(x)$

(c) $\sin(x)$ **(d)** $-\cos(x)$

(e) $-\cos(x)$ **(f)** $-\cos(x)$

(3) **(a)** $-\frac{16}{65}$ **(b)** $\frac{63}{65}$

(c) $\frac{56}{65}$ **(d)** $-\frac{33}{65}$

(e) $-\frac{16}{63}$ **(f)** $\frac{65}{56}$